AMENDMENTS TO THE CLAIMS:

The following listing of claims will replace all prior versions, and listings, of the claims in the above-identified application:

Listing of Claims:

Claim 1 (Withdrawn) A method for changing an array comprising the steps of:

changing a variable in a target array to information that represents the location of a different variable when said target array, consisting of a combination of a plurality of various kinds of elements is viewed along a path extending in a predetermined direction, and when a different, complementary variable is present upstream of a variable included in said target array;

changing said variable to information indicating that no different, complementary variable is present when no different, complementary variable is present upstream of said variable in said target array; and

repeating said steps for all the other variables included in said target array, so that said target array is changed.

Claim 2 (Currently Amended): A method for analyzing the <u>data</u> structure of a target array consisting of a plurality of different elements, the method comprising the steps of:

(a) generating a first array having elements corresponding to the <u>elements of the</u> target array, including the steps of:

(i) traversing said target array and replacing <u>a variable</u> in the first array ~~a~~ <u>that</u> ~~corresponding~~ <u>corresponds to a</u> variable that is included in the target array into information that represents a location of the same variable if it is present upstream with respect to said variable when the target array is traversed along a path extending in a predetermined direction;

(ii) replacing said variable in the first array ~~into~~ <u>with</u> information that indicates if that said same variable is not present upstream with respect to the said variable; and

(iii) repeating steps (i)-(ii) for all the other variables included in the target array; and

(b) generating a second array having elements corresponding to the elements of the target array, including the steps of:

(i) traversing said target array and replacing a variable in the second array that is included in the target array ~~to~~ <u>with</u> information that represents a location of said variable with respect to a different complementary variable present upstream with respect to said variable when the target array is traversed along a path extending in a predetermined direction;

(ii) replacing said variable in the second array ~~to~~ <u>with</u> information that indicates if no other different complementary variable is present upstream with respect to said variable; and

(iii) repeating steps (i)-(ii) for all the other variables included in the target array; and

(c) analyzing the structure of the target array by using the first array and the second array.

Claim 3 (Withdrawn) The method according to claim 2, wherein a single suffix tree is prepared while said first and said second arrays are regarded as a single pair of corresponding character strings;

wherein, from among sequences of said first and said second arrays, which are provided as labels for edges of said single suffix tree, information that indicates the location of said same variable or said different variable that is not present in each of said sequences is replaced with information that indicates the absence of said same variable or said different variable; and

wherein said suffix tree is employed to analyze the structure of said target array.

Claim 4 (Withdrawn) The method according to claim 2, wherein said target array is changed to said first and said second arrays by using, as information that indicates the position of the different variable or the position of said same variable, numerical information that represents the number of elements arranged in said target array

beginning at the position of a target variable and continuing up to the position of said same variable, or said different variable;

wherein, for said first and said second thus obtained arrays, all of said information indicating that said different variable or said same variable is not present in said target array is replaced with numerical information, obtained by inverting the positive and negative signs of said numerical information, indicating the number of elements that are present in another array at locations corresponding to said information;

wherein a suffix tree is prepared by regarding the obtained array as a character string; and

wherein, among the sequences of said obtained array that are provided as labels for edges of said suffix tree, numerical information indicating the positioning of said same variable or said different variable that is not present in each of said sequences is replaced with information indicating that said same variable or said different variable is not present; and

wherein said suffix tree is employed to analyze the structure of said target array.

Claim 5 (Withdrawn): The method according to claim 3, wherein said suffix tree is employed to extract a sequence that has the same structure and that frequently appears in said target array, so that said structure of said target array is analyzed.

Claim 6 (Withdrawn) The method according to claim 4, wherein said suffix tree is employed to extract a sequence that has the same structure and that frequently appears in said target array, so that said structure of said target array is analyzed.

Claim 7 (Withdrawn) The method according to claim 3, wherein said target array is an array where said first target array, first identification information, said second target array, first identification information, said second target array and second identification information are arranged in order; and wherein, when said suffix tree is employed to search for said common sequence for said first and said second arrays, said structures of said first array and said second array are analyzed.

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Claim 8 (Withdrawn) The method according to claim 4, wherein said target array is an array where said first target array, first identification information, said second target array, first identification information, said second target array and second identification information are arranged in order; and wherein, when said suffix tree is employed to search for said common sequence for said first and said second arrays, said structures of said first array and said second array are analyzed.

Claim 9 (Withdrawn) An apparatus for analyzing the structure of an array comprising:

first conversion means for converting a target array consisting of a combination of a plurality of different kinds of elements into a first array by changing a variable that is replaceable with another element in said target array into information representing the location of the same variable when said target array is viewed along a path extending in a predetermined direction, and when said same variable is present upstream of said variable, and by changing, when said same variable is not present upstream of said replaceable variable in said target array, all the variables in said target array into information indicating that said same variable is not present;

second conversion means for changing said target array into a second array by changing a replaceable variable in a target array into information representing the location of the different variable when said target array is viewed along a path extending in a predetermined direction, and when a different variable that is complementary is present upstream of said replaceable variable and by changing, when said different variable is not present upstream of said replaceable variable in said target array, all the variables in said target array into information indicating that said different variable is not present; and

analyzation means for employing said first and said second arrays to analyze the structure of said target array.

Claim 10 (Withdrawn) A storage medium on which a program is stored to permit a computer to perform processing comprising:

a step of converting a target array consisting of a combination of a plurality of different kinds of elements into a first array by changing a variable that is replaceable with another element in said target array into information representing the

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location of the same variable when said target array is viewed along a path extending in a predetermined direction, and when said same variable is present upstream of said variable, and by changing, when said same variable is not present upstream of said replaceable variable in said target array, all the variables in said target array into information indicating that said same variable is not present;

a second step of changing said target array into a second array by changing a replaceable variable in a target array into information representing the location of the different variable when said target array is viewed along a path extending in a predetermined direction, and when a different variable that is complementary is present upstream of said replaceable variable, and by changing, when said different variable is not present upstream of said replaceable variable in said target array, all the variables in said target array into information indicating that said different variable is not present; and

a third step of employing said first and said second arrays to analyze the structure of said target array.

Claim 11 (Withdrawn) A transmission medium for transmitting a program to permit a computer to perform processing comprising:

a step of converting a target array consisting of a combination of a plurality of different kinds of elements into a first array by changing a variable that is replaceable with another element in said target array into information representing the location of the same variable when said target array is viewed along a path extending in a predetermined direction, and when said same variable is present upstream of said variable, and by changing, when said same variable is not present upstream of said replaceable variable in said target array, all the variables in said target array into information indicating that said same variable is not present;

a second step of changing said target array into a second array by changing a replaceable variable in a target array into information representing the location of the same variable when said target array is viewed along a path extending in a predetermined direction, and when a different variable that is complementary is present upstream of said replaceable variable, and by changing, when said different variable is

not present upstream of said replaceable variable in said target array, all the variables in said target array into information indicating that said different variable is not present; and

a third step of employing said first and said second arrays to analyze the structure of said target array.

Claim 12 (Currently Amended) A method for analyzing the <u>data</u> structure of a target array including a plurality of different elements, the method comprising the steps of:

(a) generating a first array having elements corresponding to the<u> elements of the</u> target array, traversing the target array in a predetermined direction and replacing in the first array a corresponding first occurrence of each variable in the target array with information that indicates that it is the first occurrence and replacing in the first array each corresponding subsequent occurrence of each variable in the target array with information that represents a location of the subsequent occurrence of each variable in the target array relative to a prior occurrence of each variable in the target array;

(b) generating a second array having elements corresponding to the <u>elements of the</u> target array, traversing the target array in a predetermined direction and replacing in the second array a corresponding first occurrence of each variable in the target array with information that indicates that that it is the first occurrence, replacing in the second array a corresponding next occurrence of a variable in the target array that is a complement to the first occurrence of each variable with information that represents a location of the next occurrence of the variable in the target array relative to the first occurrence of each variable, and replacing in the second array each corresponding subsequent occurrence of a variable in the target array having a previous occurrence of its complement with information that represents a location of the subsequent occurrence of the variable relative to the previous occurrence of its complement; and

(c) analyzing the structure of the target array by using the first array and the second array.